

REMARKS

This is a full and timely response to the Office Action mailed April 20, 2004. Reexamination and reconsideration in light of the foregoing amendments and following remarks is respectfully solicited.

Claims 5, 7-10, and 12-14 are now pending in the application, with Claims 5 and 10 being the independent claims. Claims 5, 7, 10, and 12 have been amended to clarify the invention. No new matter is believed to have been added.

I. Rejections Under 35 U.S.C. 102(b)

Claims 5, 7, 10, and 12 were rejected under 35 U.S.C. § 102 (b) as allegedly being anticipated by U.S. Patent No. 6,315,094 (Griffin et al). This rejection is respectfully traversed, at least in light of the above amendments.

Independent Claim 5 has been amended and relates to a tuned mass damper that includes a mass having predetermined inertia properties, and a plurality of isolators arranged in a hexapod configuration that are coupled to the mass and adapted to couple to a structure that may experience vibrations at particular frequencies in six degrees of freedom. Claim 5 now recites, *inter alia*, wherein each of the isolators, in combination with the mass, is configured to be tuned independent of the other isolators to reduce a first particular frequency of the vibrations experienced by the structure in all six independent degrees of freedom.

Independent Claim 10 has also been amended and relates to a system that includes a structure that experiences vibrations at particular frequencies in six degrees of freedom and a tuned mass damper. The tuned mass damper includes a mass having predetermined inertia properties, and a plurality of isolators arranged in a hexapod configuration that are coupled to the mass and adapted to couple to the structure that may experience vibrations in six degrees of freedom. Independent Claim 10 now recites, *inter alia*, wherein each of the isolators, in combination with the mass, is configured to be tuned independent of the other isolators to reduce particular frequencies and vibrations experienced by the structure in all six independent degrees of freedom.

Griffin et al. relates to a virtual sky hook vibration isolation system that combines a primary mass suspended by a primary suspension and a secondary mass coupled to the primary

mass. The sky hook system provides reduction of transmissibility at resonance without significantly increasing high frequency transmissibility and achieves isolation passively. Griffin et al. further discloses the use of a hexapod type suspension for the secondary mass.

However, Griffin et al. does not disclose at least the above noted features of independent Claims 5 and 10. Namely, Griffin et al. fails to disclose or suggest a tuned mass damper having a plurality of isolators, wherein each of the isolators, in combination with the mass, is configured to be tuned independent of the other isolators to reduce a first particular frequency of the vibrations experienced by the structure in all six independent degrees of freedom, as recited in independent Claims 5 and 10. This novel feature, achieved by tuning each isolator, in combination with the mass, independently from the other isolators, is not achieved by the sky hook system disclosed in Griffin et al.

Thus, in view of the above, Applicants respectfully solicit reconsideration and withdrawal of the § 102(b) rejection.

II. Rejections Under 35 U.S.C. § 103

A. Claims 8 and 13

Claims 8 and 13 were rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Griffin et al. in view of Cunningham et al. Claims 8 and 13 depend from and incorporate the features of independent Claims 5 and 10, respectively and thus, rely on the arguments presented above.

Furthermore, Cunningham et al. does not make up for the deficiencies of Griffin et al. Cunningham et al. relates to a system for isolating a supported structure from transmitting vibrations to a supporting base in a spacecraft that provides six degrees of freedom in a kinematic mounting. However, nothing in Cunningham et al. discloses or teaches a tuned mass damper having a plurality of isolators, wherein each of the isolators, in combination with the mass, is configured to be tuned independent of the other isolators to reduce a first particular frequency of the vibrations experienced by the structure in all six independent degrees of freedom, as recited in independent Claims 5 and 10. Additionally, nowhere does Cunningham et al. or Griffin et al. disclose a tuned mass damper.

Therefore, reconsideration and withdrawal of the § 103 rejection is, therefore,

respectfully requested.

B. Claim 9 and 14

Claims 9 and 14 were rejected under 35 U.S.C. 103 (a) as allegedly being unpatentable over Griffin et al. in view of Gran et al. Claims 9 and 14 also depend from and incorporate the features of independent Claims 5 and 10. Thus, claims 9 and 14 also rely on the arguments set forth above.

Additionally, Gran et al. does not make up for the deficiencies of Griffin et al. Gran et al. discloses a vibration isolation and precision pointing device for reducing vibrational disturbances on a payload platform which is subject to vibration transmitted from a base platform and to other possible vibrational disturbances applied directly to the payload itself or to the payload platform. However, Gran et al. does not disclose a tuned mass damper, as recited in both claims 9 and 14, nor does Gran et al. remotely disclose or suggest at least a tuned mass damper having a plurality of isolators, wherein each of the isolators, in combination with the mass, is configured to be tuned independent of the other isolators to reduce a first particular frequency of the vibrations experienced by the structure in all six independent degrees of freedom, as recited in independent Claims 5 and 10.

In view of the foregoing, reconsideration and withdrawal of each of the § 103 rejections is respectfully requested.

IV. Conclusion

Based on the above, the claims are patentable over the citations of record. The dependent claims are also submitted to be patentable for the reasons given above with respect to the independent claims and because each recite features which are patentable in its own right. Individual consideration of the dependent claims is respectfully solicited.

The other art of record is also not understood to disclose or suggest the inventive concept of the present invention as defined by the claims.

Hence, Applicant submits that the present application is in condition for allowance. Favorable reconsideration and withdrawal of the objections and rejections set forth in the above-noted Office Action, and an early Notice of Allowance are requested.

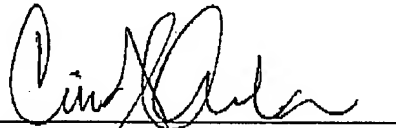
If the Examiner has any comments or suggestions that could place this application in even better form, the Examiner is requested to telephone the undersigned attorney at the below-listed number.

If for some reason Applicant has not paid a sufficient fee for this response, please consider this as authorization to charge Ingrassia, Fisher & Lorenz, Deposit Account No. 50-2091 for any fee which may be due.

Respectfully submitted,

Dated: May 25, 2004

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